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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,716	02/19/2004	Steven L. VanLaningham	03CR418/KE	5575

7590

12/12/2006

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EXAMINER
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TRINH, TAN H

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/782,716

Applicant(s)

VANLANINGHAM ET AL.

Examiner

TAN TRINH

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on 2-19-2004, 03-03-2005 and 05-05-2005, the information disclosure statement has been considered by the examiner.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 8-12 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiu (U.S. pub. NO. 2004/0082311).

Regarding claim 1, Shiu teaches a method of adapting a communication link in a network of radio communication nodes (see fig. 1, page 1, section [0009]), comprising: sending by a first node a first radio communication (see figs. 1-2, first node (BS) 102, first communication signal 132, page 3, section [0027], lines 1-8); receiving by a second node the first radio communication (see figs. 1-2, second node (WCD) 104, first communication signal 132, page 3, section [0027] lines 1-8), estimating (an estimate of the predictability of the wireless environments) by the second node the dynamics of the communications channel (see page 3, sections [0033-0034]); categorizing the dynamics of the communications channel into one of at least two groups such as

less stable or very stable conditions (see page 3, section [0035]), and selecting, based on the chosen group, the use of either closed loop link adoptions or open loop adoptions of communication link parameters (see page 5, section [0048]).

Regarding claim 2, Shiu teaches the method of claim 1. Shiu further teaches wherein one of the two groups is a static group (see page 1, sections [0009-0010]). Because the conditions of the signal transmission path of the wireless channel are stable.

Regarding claim 3, Shiu teaches the method of claim 1. Shiu further teaches wherein one of the two groups is a dynamic group (see page 1, sections [0009-0010]). Because the conditions of the signal transmission path of the wireless channel are rapidly changing.

Regarding claim 4, Shiu teaches the method of claim 1. Shiu further teaches wherein the estimate is based on the received signal strength indicator (RSSI) (see page 5, section [0050]).

Regarding claim 8, Shiu teaches the method of claim 1. Shiu further teaches wherein the communication link parameters comprise a transmit power (see page 4, section [0046]).

Regarding claim 9, Shiu teaches a method of changing communication link adaption techniques in a network of radio communication nodes (see fig. 1, page 1, section [0008-0009]), comprising: detecting interference based on an open loop metric (see fig. 1, sections [0009-0010] and page 4, section [0041]); estimating (an estimate of the predictability of the wireless

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environments) using an open loop estimator (see page 3, section [0033]), and determining, whether transmission parameters should be adjusted based on open loop metrics or closed loop metrics, based on the channel dynamics (see page 3, sections [0033-0034]).

Regarding claim 10, Shiu teaches the method of claim 9. Shiu further teaches the adjusting the transmission parameters based on open loop metrics (see pages 4-5, sections [0041 and 0048]).

Regarding claim 11, Shiu teaches the method of claim 10, Shiu further teaches the adjusting the transmission parameters based on closed loop metrics (see pages 4-5, sections [0046 and 0048]).

Regarding claim 12, Shiu teaches the method of claim 1. Shiu further teaches wherein the open loop estimator uses the received signal strength indicator (RSSI) (see page 5, sections [0048 and 0050]).

Regarding claim 16, Shiu teaches the method of claim 1. Shiu further teaches wherein the transmission parameters comprise a transmit power (see page 4, section [0046]).

Regarding claim 17, Shiu teaches a radio node communication system (see fig. 1), comprising: a first radio node (see fig. 1-2, first node (BS) 102); a second radio node (see fig. 1-2, second node (WCD) 104); a processor generating an open loop metric to estimate channel

dynamics (see page 3, sections [0033-0034]). (In this case is open loop and estimate channel dynamics, since the WCD moving at high velocity and unstable), and determining, based on the channel dynamics, the transmission parameter adjustments based on one of the open loop metrics or closed loop metrics page 5, sections [0046-0048]).

Regarding claim 18, Shiu teaches the system of claim 17. Shiu further teaches wherein the transmission parameters comprise a transmit power (see page 4, section [0046]).

Regarding claim 19, Shiu teaches the system of claim 17, Shiu further teaches wherein the first radio node comprises a radio transceiver and the second radio node comprises a radio transceiver (see fig. 2, first radio (BS) 102, radio transceiver (transmitter 212 and receiver 214) and second radio node (WCD) 104, radio transceiver (transmitter 224 and receiver 222), page 3, section [0030]).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-6 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiu (U.S. Pub. NO. 2004/0082311) in view of Sadri (U.S. Pub. 2005/0032514).

Regarding claims 5-6, Shiu teaches wherein the estimate is based on the signal interference (see page 1, section [0009]). But Shiu does not mention the signal to noise ratio (SNR) or the symbol error rate (SER).

However, Sadri teaches an estimating process for detecting the signal quality based on the signal to noise ratio (SNR) or the symbol error rate (SER) (see page 3, section [0026]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Shiu with Sadri, in order to obtain better flexibility so that various of signal quality measuring techniques can be used for the wireless system.

Regarding claims 13-14, Shiu teaches wherein the estimate is based on the signal interference (see page 1, section [0009]). But Shiu does not mention the signal to noise ratio (SNR) or the symbol error rate (SER).

However, Sadri teaches an estimating process for detecting the signal quality based on the signal to noise ratio (SNR) or the symbol error rate (SER) (see page 3, section [0026]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Shiu with Sadri, in order to obtain better flexibility so that various of signal quality measuring techniques can be used for the wireless system.

6. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiu (U.S. Pub. NO. 2004/0082311) in view of Petrus (U.S. Patent No. 2004/0005905).

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Regarding claim 7, Shiu teaches first radio communication. But Shiu does not mention wherein the first radio communication includes a message header with a transmission power indicator.

However, Petrus a message header with a transmission power indicator (see fig. 2, header 205, page 2, section [0023]). Since the transmission power indicator is the transmission power control for increasing or decreasing in transmission power by a predetermined amount in the power control message).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Shiu with Petrus, in order to provide predetermined amount of transmission power in the power control message.

Regarding claim 15, Shiu teaches receiving first radio communication. But Shiu does not mention wherein receiving a radio communication having a message header with a transmission power indicator.

However, Petrus a message header with a transmission power indicator (see fig. 2, header 205, page 2, section [0023]). Since in the receiving the transmission power indicator is the power control message for increase or decrease in transmission power control by a predetermined amount in the power control message indication when received).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Shiu with Petrus, in order to provide predetermined amount of transmission power in the power control message.



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7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiu (U.S. Pub. NO. 2004/0082311) in view of Kwak (U.S. Pub. No. 2004/0014482).

Regarding claim 20, Shiu teaches the estimate transmission power control from first node. But Shiu does not mention the transmission power indicator from the first node.

However, Kwak teaches wherein the transmission power indicator from the first node (see fig. 1 and 3, first node 101 or node B 301, page 13, section [0103]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Shiu with Kwak, in order to provide mobile phone with the transmission power reference numeral indicates paths of channel from base station (see Kwak page 1, section [0007]).

### ***Conclusion***

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(571) 273-8300, (for Technology Center 2600 only)**

*Hand-delivered responses should be brought to the Customer Service Window (now located at the **Randolph Building, 401 Dulany Street, Alexandria, VA 22314**).*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is (703) 306-0377.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh  
Division 2618  
December 8, 2006

**PATENT EXAMINER**  
**TRINH, TAN**

